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ABSTRACT

Research and clinical practice at the Spanish Family Guidance Clinic (Miami, Florida) has suggested that ecological structural family therapy might be a treatment of choice for Cuban immigrants. Such a treatment approach was found to be consistent with the values of this population and was particularly helpful in addressing special problems arising from the acculturation process. Nevertheless, it was not clear whether both conceptualization and therapeutic intervention needed to be ecological, or whether it was sufficient to conceptualize in ecological terms but to intervene structurally only within the conjoint family context. The present study was conducted to investigate the relative effectiveness of two treatment approaches, labeled "intramural" and "ecological." The subjects were thirty-three Cuban families admitted to the clinic in 1975-76. All of these families had at least one adolescent member and one family member abusing drugs. The families were randomly assigned to different experimental groups and were treated by the clinic's therapists for from three to twenty sessions each. The results of the study indicate that both ecological and intramural treatment were highly effective forms of therapy for these families. The number of clients abusing drugs was greatly reduced, and the families improved their functioning in the educational, occupational, peer, judicial, social services, and recreational spheres. (Author/GC)

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# Ecological Structural Family Therapy with Cuban Immigrant Families [1]

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ECOLOGICAL STRUCTURAL FAMILY THERAPY WITH CUBAN IMMIGRANT FAMILIES

Research and clinical practice at the Spanish Family Guidance Clinic, Dade County, Florida, suggested that ecological structural family therapy might be a treatment of choice for Cuban immigrants (Szapocznik, Scopetta, & King, 1978). These findings revealed that when the special characteristics and problems of Cuban immigrant families were considered, ecostructural family therapy was based on a set of therapeutic assumptions consistent with the values of Cuban immigrants (Szapocznik, Scopetta, Aranalde, & Kurtines, in press a) and was particularly helpful in addressing special problems arising from the acculturation process (Szapocznik, Scopetta, Kurtines, & Aranalde, in press b).

Nevertheless, based on previous findings and clinical experience, it was not clear whether both conceptualization and therapeutic interventions needed to be of an ecological variety, or alternatively whether it was sufficient to conceptualize in ecological structural systems terms (e.g., Aponte, 1974), but intervene structurally only within the conjoint family context (cf. Minuchin, 1974). The present study was conducted to investigate within an experimental design, the relative effectiveness of two treatment conditions. These conditions were labeled Intramural and Ecological. In both conditions, presenting problems, supporting dynamics as well as treatment plan were conceptualized in ecological structural family therapy terms (Szapocznik, et,al. 1978). However, the nature of the actual therapeutic interventions differed so that in the Intramural condition, only those interventions occurring in the therapists' office and within the conjoint mode

were allowed, whereas in the Ecological condition, at least two interventions were required directly on aspects of the family's ecology.

## METHOD

### Subjects

The subjects were 33 families admitted to the Spanish Family Guidance Clinic between August 1975 and December 1976 and meeting the following criteria: (1) Cuban immigrants, (2) at least one adolescent member, (3) one family member abusing drugs, (4) at least 3 members in the family, (5) all family members willing to participate in therapy, (6) no overt psychotic, suicidal or homicidal behaviors, and (7) not involved in other therapy. A total of 123 family members participated in the study, with a mean of 3.75 members per subject family. In one-third of the cases (11 families) there were two family members identifying themselves as drug or alcohol abusers upon admission to the Clinic. Thus, a total of 44 clients were seen who were abusing one or more substances at the beginning of treatment.

Table 1 illustrates the substance use patterns of the 44 substance abusing family members at admission. This table reveals that a large majority of clients identified their primary problem as drug involvement in either the marijuana or tranquilizer category. Frequencies of use of nearly all drugs identified as primary problems indicate that these drugs were used on a regular (often on a daily) basis. Seventeen clients reported using more than one drug and eleven reported having problems with at least three drugs. It was interesting to note that amphetamines and cocaine were not listed as primary problems, but were used in conjunction with other drugs in the population under investigation.

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A total of 33 subjects were designated as Identified Patients in the present study, including 21 males with a mean age of 17.24 and 12 females with a mean age of 21.67. The mean age for all 33 Identified Patients was 18.15. Presenting complaints included adolescent acting-out syndromes, drug involvement, neurotic symptomatology and family problems.

Therapists

The present study included five full-time and three part-time family therapists. Four therapists were M.S.W.'s, two were M.A. psychologists, and two had bachelors' degrees in psychology. Five of the therapists were females between the ages of 25 and 35 and three were males between the ages of 23 and 30. All therapists were of Cuban origin and were bilingual. They had resided in the United States for a minimum of 12 years and had earned their degrees in American Universities. All therapists received intensive in-service training in family therapy including individual and group supervision, guest workshops, videotape review, and didactic lectures. The therapists were closely supervised by an experienced clinician.

Families were assigned to family therapists on the basis of clinical judgments which considered family composition in conjunction with the age, sex, and experience of the therapist. Thus, assignment to therapists was not random.

Treatment Conditions

Families were assigned randomly to one of the two experimental conditions. An essential difference between the two treatment conditions

concerned the range of interventions available to and required of the therapist. In the Intramural (within walls) condition, therapeutic interventions were structured to take place within the relationship of the therapist and the family in treatment. This condition represented a traditional treatment approach in which the assessment of the family's needs, as well as therapy, took place strictly within the therapist-family relationship. In this condition, interventions which took place outside of the therapist's office and/or outside of the therapist-family relationship were restricted to a minimum. If it became necessary to manipulate an environmental variable, this was done by mobilizing the family members so that they manipulated the environmental variable themselves. With the exception of interventions within the family system, therapists did not intervene in other ecosystems.

For example, in a family in which the IP presented problems related to his educational ecosystem and the parents felt powerless to help their child improve in school, the therapist might encourage the parents to take more interest in the problem and increase their authority. Behavioral options including a meeting at the school for the parents and certain teachers might be discussed, but the therapist would not directly intervene in the educational ecosystem.

In the Ecological condition, therapists were required to make a minimum of two direct interventions in at least two ecosystems of the family which were clinically judged to be dysfunctional. These interventions were direct in the sense that the therapist initiated actions aimed at improving the family members relationships to particular ecosystems outside of the family. Therapists treating families in the Ecological condition were also permitted to utilize the techniques of the Intramural

condition. However, a distinguishing feature of the Ecological condition was that the therapeutic system included not only the therapist and the family members, but also representatives of ecosystems with whom the family had dysfunctional relationships.

For example, the therapist would make direct contact with the school teachers and counselors of the IP in the family mentioned above which had a dysfunctional relationship with the educational ecosystem. The therapist might arrange a psychological evaluation aimed at clarifying educational needs and vocational aptitudes so that the IP's relationship with the educational system could become more meaningful. The therapist might also intervene directly to help the parents become more involved in the educational system of the IP, perhaps by acting as an advocate of the family at meetings with school authorities.

In all family cases which received Ecological treatment, these direct interventions at the interface between the family and other dysfunctional ecosystems were additions to the treatment interventions which took place "within the walls" of the therapy sessions. Thus, in order to assess whether the Ecological condition, as compared to a traditional therapy approach, produced enhanced therapeutic gains, treatment outcomes of families in the Ecological condition were compared with the outcomes of families treated in the Intramural (or control) condition.

Length of Therapy. Therapeutic treatment ranged from three to 20 sessions with a mean of 12 family sessions per case. Individual sessions with certain family members were held when this procedure was clinically indicated.

Treatment Outcome Measures

Psychiatric Status Schedule (Spitzer, Endicott, Cohen, & Fleiss, 1970). Most analyses regarding the relative effectiveness of the two treatment conditions are based upon various indices of the Psychiatric Status Schedule (PSS). The PSS was designed to improve the research value of clinical judgments of psychopathology and role functioning. It contains both a standardized interview and a matching inventory of 321 precoded items. In addition to sections dealing with the usual signs and symptoms of psychiatric disorder, the PSS contains sections for evaluation of (1) formal role functioning; (2) the efficiency of conduct of leisure time activities or daily routine; (3) interpersonal relationships; (4) use of drugs and alcohol; and (5) illegal or other psychopathic activities. The PSS administration was adapted so as to take into consideration specific cultural traits, values and practices. For example, if a person was known to be a believer in Spiritualism, his assertions that he may have experienced the presence of a spirit was not to be interpreted as a psychotic delusion in the absence of other psychotic symptomatology. However, the changes were standardized so that no biasing effects were introduced into the collection of data. The PSS was administered to the IP in the family prior to and following treatment by a trained interviewer other than the therapist.

The following indices from the PSS were considered in the outcome study: the Drug Abuse Scale (Items 77-97 of the PSS) Score, the Total Psychopathology Score, the Summary Role Scale, and the four factor-analytically based summary symptom scale scores: Subjective Distress, Behavioral Disturbance, Impulse Control Disturbance, and Reality Testing Disturbance.

Ecosystems Global Ratings. In order to consider more directly changes in the families' relationship to ecosystems which may have had relevance to their presenting problems, the staff at SFGC developed a series of Ecosystems Functioning Ratings.[1] These ratings were completed by someone other than the therapist both prior to and following treatment. The rater made global ratings of the family system's functioning in relationship to the following six ecosystems: Educational System, Occupational System, Peer System, Judicial System, Social Services System, and Recreational System. These global ratings were made on five-point scales ranging from "very well" to "very poor." Ratings were based on a series of clinically derived items which assessed various characteristics of the relationship of the family to each ecosystem. For example, items utilized in rating the family system's relationship to the occupational system included: degree of unemployment, attendance record at work, productivity and interest, and satisfaction with the work performed.

## Procedure

Families meeting subject criteria were randomly assigned to one of two treatment conditions: Ecological or Intramural treatment. Preceding and following treatment, the identified patient (IP) in each family completed the PSS, administered by a clinician other than the treating therapist. Clinicians administering the PSS were experimentally blind concerning the treatment condition of the IP and his family. A series of Ecosystem Functioning Ratings were performed by the treating therapist prior to and following treatment. These ratings provided additional indices of treatment effectiveness which supplemented information provided by the PSS.

The Ecosystem Functioning Ratings concerned the entire family unit, rather than only the IP.

## RESULTS

### Therapeutic Outcome Independent of Treatment Modality

It was of interest in the present research project to establish whether families involved in the study derived therapeutic benefits regardless of which treatment modality they received. In this exploratory investigation it was also desirable to establish whether or not the Ecosystem Functioning Ratings were sensitive to changes resulting from treatment. Therefore, a series of t-tests was performed comparing the pre - and post-treatment global ratings of each family's ecosystems.

Table II presents pre - and post-treatment means and standard deviations of the ecosystems global ratings for families in the present study. In addition, t-values resulting from statistical comparisons of the pre - and post-treatment mean ratings and their corresponding significance levels are presented. Table II reveals that families in the present study exhibited highly significant improvement ($p's < .001$) in all six ecosystems considered. Families were rated as functioning significantly more successfully in relation to all of the following systems: educational, occupational, peer, judicial, social services, and recreational. Analyses of the individual items of the subscales concerning each ecosystem also yielded significant t-values in comparisons of pre - and post-treatment mean scores (all $p's < .05$).

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Considering the wide range of adaptive behaviors and system relationships included on the ecosystem subscales, the consistently significant improvements exhibited by families in the present study indicate that the family therapy approach was effective in producing changes which generalized across a variety of behaviors in a number of ecosystems.

Significant improvement was also found for the IP in each family when pre - and post-treatment PSS outcome indices were compared. Table III presents the pre - and post-treatment means and standard deviations of the PSS scale scores used to evaluate therapy outcome. The t-values result from statistical comparisons of these pre - and post-treatment mean scores and their corresponding significance levels are also presented. This table reveals that significant symptom improvement in the IP was found in the following areas: drug abuse, impulse control disturbance, total psychopathology, subjective distress, behavioral disturbance, and summary role functioning (all $p's < .01$).

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Outcome as a Function of Treatment Modality

In order to consider the major hypothesis under investigation, namely the prediction that families and IP's would exhibit greater improvement when treated via an ecological as compared to an intramural approach, a series of analyses of covariance (ANACOVA) was performed on the various outcome measures. Table IV presents a summary of the ANACOVA's which were performed on the post-treatment ecosystems ratings. In each case the pre-treatment rating was employed as the covariate to control for the effects of initial level of functioning. As indicated in Table IV, none

of the post-treatment ecosystems global ratings differed significantly for families treated with the ecological as compared to the intramural approach. That is, treatment modality was not systematically related to outcome as measured by the ecosystem global ratings.

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The absence of a differential treatment modality effect also occurred when the post-treatment PSS outcome indices of the IPs were examined with ANACOVA's. The results of these ANACOVA's are summarized in Table V. These analyses indicate that an Ecological treatment was equally but not more effective than a traditional Intramural family therapy approach in treating a Latino population of families with drug abusers. Thus, the hypothesis predicting enhanced therapeutic outcome in the Ecological condition was not supported.

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The results presented in Tables II through V suggest that although the families and IPs in the present study displayed significant improvement as a result of family therapy, the type of family therapy employed was not a significant factor related to the outcome measures employed. Some of the possible reasons for this finding, as well as the clinical and research implications of this study are outlined in the discussion section below.

Changes in Drug Use Patterns Following Treatment

As reported earlier, the PSS Drug Abuse Scale scores of the IPs were significantly lower following treatment in both the Ecological or Intramural

modality. The specific changes in the drug use patterns of the IPs and other family members reporting substance abuse at admission were also investigated via an item by item analysis of the PSS Drug Abuse Scale. Table VI presents the pre - and post-treatment drug abuse patterns of all substance abusing family members. This table reveals that following treatment the number of clients reporting a drug problem of any kind (i.e., Primary Drug) declined from 44 to 19. This high degree of reduced drug use was contributed to by clients in all Primary Drug Type Categories. Table VI also indicates that the incidence of multiple drug use also declined appreciably. The number of clients abusing two drug types declined from 17 to 3 and the number of clients abusing three or more drug types declined from 11 to 2. In addition, following treatment several clients had indicated a change in their primary drug to a less addictive substance (e.g., inhalant or barbiturate to marijuana).

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## Discussion and Clinical Implication

The results of the present study indicate that both Ecological treatment and Intramural treatment were highly effective forms of therapy for Latin families presenting symptoms associated with or including drug abuse. The IPs in the families under investigation exhibited highly significant reductions in drug abuse, impulse control disturbance, total psychopathology, subjective distress, behavioral disturbance, and role dysfunctioning, as measured by the PSS (all p's < .01).

In addition, following treatment families in both conditions had significantly improved their functioning in relationship to the following ecosystems: educational, occupational, peer, judicial, social services, and recreational (all p's < .001). It appears that when both therapy conditions were conceptualized in ecological structural terms, they were highly effective and led to generalized improvement in diverse areas of psychosocial functioning. This pattern of generalized improvement is consistent with the systems-oriented framework adopted in the present study for assessing and treating psychological dysfunction.

The dramatic reduction in the number of clients abusing drugs following treatment in family therapy is indeed encouraging. The number of clients abusing drugs of any type was reduced from 44 to 19, with reduction in the use of marijuana, sedatives, hypnotics, tranquilizers, and alcohol all contributing appreciably to these results. This reduced drug abuse, as a result of family therapy, may indicate that drug abuse served a function for the drug user which was no longer needed following treatment. Based upon case reports and upon pre- vs. post-treatment analyses of outcome indices, it appears that reduced anxiety and discomfort, and increased impulse control following treatment may help account for the decreased drug use. It is also likely that intra-family changes such as decreased conflict and increased communication were contributing factors.

The hypothesis that families treated in the Ecological condition would exhibit enhanced benefits when compared to families treated with the traditional, Intramural approach was

not supported. Although both conditions were highly effective, there were no significant differences on any outcome index between conditions. There are several logical and methodological speculations which may account for these results. First, it is possible that the differences between the Ecological and Intramural conditions were not sufficiently salient. The only basic difference between conditions was the requirement that therapists in the Ecological condition initiate a minimum of two ecological interventions. In some Ecological cases only this minimum occurred, while in many Intramural cases clients were mobilized to improve their relationships with various ecosystems. Furthermore, families in both conditions were exposed to therapists who were bicultural and keenly sensitive to the needs of Latin clients. These factors taken together may support the speculation that families in treatment did not experience the two conditions in a sufficiently different manner to legitimately test the experimental hypothesis.

A second related speculation which may help account for the absence of significant differences for the two conditions concerns the apparent power of family therapy in this population. All families in the present study were willing to participate in and apparently saw a need for family therapy. Therefore, for most IPs the family ecosystem was a primary area of dysfunctioning. Regardless of treatment condition, IPs displayed highly significant reductions in drug abuse and other symptoms as a result of family therapy. Thus, IPs in the present study (a majority of whom were adolescent and young adult poly-drug

users) benefited greatly from a treatment incorporating family therapy. In other words, the absence of a significant difference between the Ecological and Intramural conditions in the present study may be due to the possibility that IPs in both conditions were actually receiving family therapy which was of primary importance.

A third area of speculation regarding the equal effectiveness of the Ecological and Intramural conditions concerns the "Latinization" of Dade County during the past few years. The expected superiority of the Ecological condition and in fact the Ecological treatment model itself, were partially based upon the difficulties which Latin clients had in coping with ecosystems which were Anglo-oriented. It was felt that the expert intervention of a bicultural therapist might help alleviate difficulties in the acculturation process which were contributing to psychosocial dysfunctioning.

Since the planning of the present study, however, Dade County has changed in ways which make the need for direct therapeutic interventions into some ecosystems of Latin families less pressing. Dade County is now officially a bilingual county in which governmental and judicial systems have to bear in mind specific needs of the Latin Community. More often than before, Latins are able to interact with educational, occupational, recreational, spiritual and other ecosystems which are Latin or Latin-influenced. Thus, the acculturation process has become somewhat less demanding, and perhaps as a result, the impact of certain ecological interventions in the present study was not as great as had been expected.

Whereas any one or a combination of these factors may account for the lack of differences between conditions, clinical experience obtained during the study points to yet another factor. It would appear that in most instances effective ecological therapy can be conducted by conceptualizing in ecostructural terms, and directing the family to implement the necessary ecological interventions. This is a challenging concept deserving further study. Additional investigations are already underway to explore this new hypothesis.

## Footnote

1 The Ecosystem Functioning Ratings are available from the first author upon request.

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TABLE I

Drug Use Patterns of Substance Abusing Family Members at Admission

Members of Clients in Each Drug Use Category and Mean Frequencies

| DRUG TYPE | PRIMARY PROBLEM | $\bar{M}$ FREQUENCY | SECOND PROBLEM | $\bar{M}$ FREQUENCY | THIRD PROBLEM | $\bar{M}$ FREQUENCY |
|---|---|---|---|---|---|---|
| Alcohol Abuse | 5 | 3.80 | 1 | 1.00 | 2 | 3.00 |
| Barbiturates | 1 | 2.00 | — | — | 1 | 2.00 |
| Other Sedatives, Hypnotics, or Tranquilizer | 17 | 4.00 | 5 | 2.60 | 3 | 1.67 |
| Amphetamines | — | — | 6 | 2.00 | 2 | 4.50 |
| Cocaine | — | — | 2 | 2.50 | 2 | 1.50 |
| Marijuana/Hashich | 19 | 4.14 | 2 | 3.00 | — | — |
| Inhalant | 2 | 4.50 | 1 | 3.00 | 1 | 3.00 |

[1]Note: Frequencies were taken from CODAP Admission Reports according to the following key: 0= No present use; 1= less than once per month; 2= less than once per week; 3=Once per week; 4= several times per week; 5= daily.

TABLE II

Means, Standard Deviations, and T-values for Pre-treatment and Post-treatment Ecosystems Global Ratings

| Ecosystem | Pre-treatment $\bar{M}$ | SD | Post-treatment $\bar{M}$ | SD | t | df | $p \leq$ |
|---|---|---|---|---|---|---|---|
| Educational System | 3.93 | 1.25 | 2.41 | 1.09 | 7.50 | 28 | .001 |
| Occupational System | 3.23 | 1.19 | 1.83 | .70 | 6.96 | 29 | .001 |
| Peer System | 3.00 | .89 | 2.17 | .65 | 7.55 | 29 | .001 |
| Judicial System | 3.32 | 1.57 | 1.88 | 1.09 | 5.31 | 24 | .001 |
| Social Services System | 2.57 | 1.17 | 1.75 | .70 | 3.99 | 27 | .001 |
| Recreational System | 3.87 | .94 | 2.53 | .94 | 6.17 | 29 | .001 |

TABLE III

Means, Standard Deviations, and T-values for Pre-treatment and Post-treatment PSS Outcome Indices

| PSS Scale | Pre-treatment $\bar{M}$ | SD | Post-treatment $\bar{M}$ | SD | t | df | p< |
|---|---|---|---|---|---|---|---|
| Drug Abuse | 59.27 | 14.45 | 51.87 | 7.57 | 3.43 | 29 | .002 |
| Impulse Control Disturbance | 58.87 | 11.98 | 50.17 | 7.98 | 4.65 | 29 | .001 |
| Total Psychopathology | 46.20 | 12.27 | 35.97 | 6.86 | 5.21 | 29 | .001 |
| Subjective Distress | 42.13 | 11.25 | 35.43 | 6.37 | 3.38 | 29 | .002 |
| Behavioral Disturbance | 49.37 | 12.52 | 44.67 | 8.87 | 2.78 | 29 | .01 |
| Reality Testing Disturbance | 48.00 | 9.47 | 44.93 | 3.15 | 1.68 | 29 | .11 |
| Summary Role | 53.43 | 15.66 | 39.27 | 16.61 | 3.27 | 29 | .003 |

TABLE IV

Summary of Analyses of Covariance for Post-treatment Ecosystems Outcome Indices as a Function of Treatment Modality, Covarying Pre-treatment Ecosystems Global Ratings

| Outcome Index | Source | df | MS | F | p< |
|---|---|---|---|---|---|
| Educational System | Covariate | 1 | 9.03 | 10.98 | .01 |
| | Modality | 1 | 2.56 | 3.12 | .09 |
| | Residual | 23 | .82 | --- | --- |
| Occupational System | Covariate | 1 | 1.76 | 4.21 | .05 |
| | Modality | 1 | .29 | .70 | .99 |
| | Residual | 24 | .42 | --- | --- |
| Peer System | Covariate | 1 | .09 | .19 | .99 |
| | Modality | 1 | .35 | .76 | .99 |
| | Residual | 24 | .46 | --- | --- |
| Judicial System | Covariate | 1 | 7.42 | 7.75 | .02 |
| | Modality | 1 | 2.23 | 2.34 | .14 |
| | Residual | 19 | .96 | --- | --- |
| Social Services System | Covariate | 1 | 1.81 | 3.77 | .07 |
| | Modality | 1 | .23 | .47 | .99 |
| | Residual | 22 | .48 | --- | --- |
| Recreational System | Covariate | 1 | .07 | .08 | .99 |
| | Modality | 1 | .16 | .19 | .99 |
| | Residual | 24 | .85 | --- | --- |

TABLE V

Summary of Analyses of Covariance for Post-treatment Ecosystems PSS Outcome Indices as a Function of Treatment Modality, Covarying Pre-treatment PSS Scale Scores

| Outcome Index | Source | df | MS | F | P ≤ |
|---|---|---|---|---|---|
| Total Psychopathology Score | Covariate | 1 | 253.25 | 6.44 | .02 |
| | Modality | 1 | 6.02 | .15 | .99 |
| | Residual | 26 | 39.30 | -- | -- |
| Subjective Distress Score | Covariate | 1 | 139.11 | 3.62 | .07 |
| | Modality | 1 | .41 | .01 | .99 |
| | Residual | 26 | 38.44 | -- | -- |
| Behavioral Disturbance Score | Covariate | 1 | 2909.67 | 20.74 | .001 |
| | Modality | 1 | 7.31 | .05 | .99 |
| | Residual | 26 | 140.30 | -- | -- |
| Impulse Control Score | Covariate | 1 | 1304.33 | .75 | .99 |
| | Modality | 1 | 4047.97 | 2.33 | .14 |
| | Residual | 26 | 1741.27 | -- | -- |
| Reality Testing Score | Covariate | 1 | 43.90 | .05 | .99 |
| | Modality | 1 | 1098.34 | 1.28 | .27 |
| | Residual | 26 | 859.24 | -- | -- |
| Drug Abuse Scale Score | Covariate | 1 | 661.23 | 19.26 | .001 |
| | Modality | 1 | 27.23 | .79 | .99 |
| | Residual | 25 | 34.34 | -- | -- |
| Summary Role Scale Score | Covariate | 1 | 331.52 | 1.40 | .25 |
| | Modality | 1 | 3.80 | .02 | .99 |
| | Residual | 26 | 237.26 | -- | -- |

TABLE VI

Pre-and Post- treatment Drug Use Patterns of Substance Abusing Family Members: Number of Clients in Each Drug Category

| Drug Category | Primary Drug | | Second Drug | | Third Drug | |
|---|---|---|---|---|---|---|
| | Pre | Post | Pre | Post | Pre | Post |
| Marijuana | 19 | 9 | 2 | 1 | 0 | 1 |
| Sedatives, Hypnotics and Tranquilizers | 17 | 8 | 5 | 0 | 3 | 1 |
| Alcohol | 5 | 1 | 1 | 1 | 1 | 1 |
| Inhalants | 2 | 1 | 1 | 0 | 1 | 0 |
| Barbiturates | 1 | 0 | 0 | 0 | 1 | 0 |
| Amphetamines | 0 | 0 | 6 | 1 | 2 | 0 |
| Cocaine | 0 | 0 | 2 | 0 | 2 | 0 |
| Totals | 44 | 19 | 17 | 3 | 11 | 2 |